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Kodama Field Notebook #3

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1-12-85

La Pilala 10:30 to

- Pilalo beds: karstic sediments
- SC. de Barilalo

10 m of section

1-3 specimen site / m
reconnaissance survey

- bottom site: fluvial channel stream-glacio-fluvial gravel

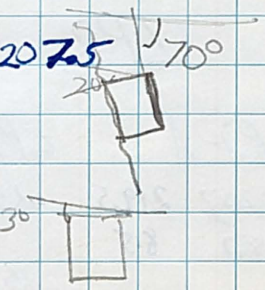
Site 1 - at bottom of section

LP1-A

$\alpha = 195°$ 20 25 70°

$\beta \rightarrow$

$\beta = 20°$



LP1-B

$\alpha = 198°$ 210.5

$\beta = 10°$

~5cm → ← 4cm

C A B

LP1-C Corrected

$\alpha = 188°$ 200.5

$\beta = 19°$

---

very top of section ~10cm above LP1

just under gravel

LP2

LP2-A

$\alpha = 207$ 219.5

$\beta = 8.5$ 8.5

LP2-B

$\alpha = 180 + 28$

$208°$ 220.5

$\beta = 10.5°$

LP2-C

$\alpha = 198°$ 210.5

$\beta = 5°$

site
LP3
~1m below LP2
or ~1m below ligo dot
of the section

LP3-A
$\alpha = 198$ 210.5
$\beta = 10°$

LP3-B
$\alpha = 200$ 212.5
$\beta = 6.5°$

LP3-C
$\alpha = 175°$ 187.5
$\beta = 0°$

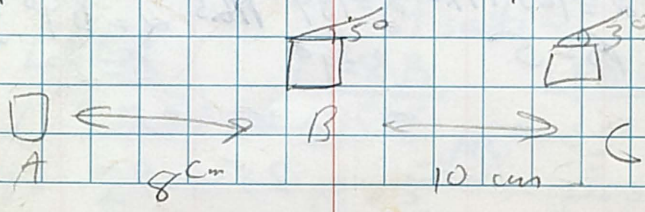
---

site LP4
~1m below LP3
or 2m below dot of section

LP4-A
$\alpha = 167$ 179.5
$\beta = 15°$

LP4-B
$\alpha = 181$ 193.5
$\beta = 18.5°$

LP4-C
$\alpha = 199°$
$\beta = 10°$



site
LP5
~1m below LP4
or 3m below top of section

LP5A
$\alpha = 168$ 180.5
$\beta = 8.5°$

LP5B
$\alpha = 185°$ 197.5
$\beta = 9.5°$ 9.5

LP5C
$\alpha = 243$ 255.5
$\beta = 16°$

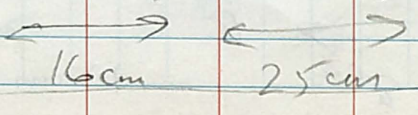
LP6

Note 1m above LP1
or 1m above bottom
of section

LP6-A
$\alpha = 165$ 177.5
$\beta = 5°$

LP6-B
$\alpha = 184°$ 196.5
$\beta = 1°$

LP6-C
$\alpha = 189°$ 201.5
$\beta = 2°$



LP7

1 m below LP5

or 4m below the
t/p of the section

LP7A LP7B LP7C

$\alpha = 545E$ 135 + 12.5 = 147.5 $\alpha = S35°E$ 145 12.5 157.5 $S57°E$ 123 12.5 135.5

$\beta = 10°$ $\beta = 7°$ $\beta = 1.5°$

7 cm

C A B

14cm 7cm

---

sit LP8 1 m above LP6
or 2m above bottom
of section

LP8A LP8B LP8C

$\alpha = S22.5°E$ 170 $S15°E$ 170.5 $S5°E$ 167.5

$\beta = 2°$ $\beta = 5°$ $\beta = 3.5°$

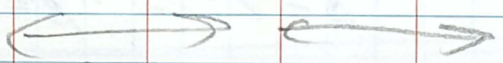
15 cm 15 cm

site LP-9 1m below LP7
or 5m below
start of the section

LP9A
$\alpha = 520° E$ ~~172.5~~
$\beta = 10°$

LP9B
$\alpha = 59° E$ ~~132.5~~ 183.5
$\beta = -1°$

LP9C
$\alpha = 210°$ 222.5
$\beta = 5°$



2nd outcrop in La Pilala area

adjacent road from other outcrop just east (under road)

~ 300 m to the west

only 6 feet thick

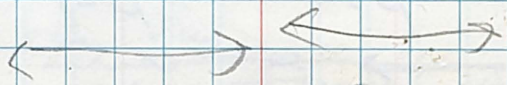
- folded 1 side at bottom directly on gravels

site
OP1 - at bottom on gravels

OP1A OP1B OP1C

α = 333 345.5 α = 355° 7.5 α = 11° 23.5

β = -5° β = -8.5° β = -6°



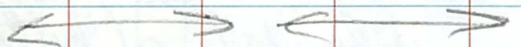
site OP2

3ft about OP1

OP2A
$\alpha = 349°$ 1.5
$\beta = 7.5°$

OP2B
$\alpha = 350°$ 2.5
$\beta = 0°$

OP2C
$\alpha = 357$ 9.5
$\beta = 3.5°$



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site OP3 2'9.5" above OP2

~~4~~ 9" from left of section

OP3-A
$\alpha = 342°$ 357.5
$\beta = 9°$

OP3-B
$\alpha = 352°$ 4.5
$\beta = 1.25°$

OP3-C
$\alpha = 352°$ 4.5
$\beta = 4°$

Jan 13, 1984 Domingo

at Railroad + Pichilcatén

Here site is called Stelin
the railroad cut - this big one

500m from one Neat
Clinch et al sampled
in 1984

I have collected 4 samples
1 m above the base of
the section sampled last year
(about sample 3 from last year)
side RP1

sand 2.5cm

clay 1.5 cm ☐ RP1.A

sand 3.5cm

clay 3 cm

sand 3.5 cm ☐ RP1.B ☐ RP1.C

clay 1.5 cm

sand 3 cm

clay 11 cm ☐ RP1.D

RP1 A - clay
$\alpha = 255$ 267.5
$\beta = 9°$

RP1 B - sand
$\alpha = 255$ 267.5
$\beta = 10.5°$

RP1C - sand
$\alpha = 283$ 295.5
$\beta = 3°$

RP1D - clay
$\alpha = 251$ 263.5
$\beta = 7.5°$

Thing not fall offset
I'm taking over
I replaced it correctly

site RP2

30 m from RP1
about 2.5 m below
site RP1

three sampled clay layers

RP2A
$\alpha = 203°$ 215.5
$\beta = 1°$

RP2B
$\alpha = 217°$ 229.5
$\beta = 1.5$

RP2C
$\alpha = 260°$ 272.5
$\beta = 0°$ 0

Last RRcat of Pickleaf
approx 1000m east of
RP2 site

I am above site RP4
(at the base of section)
by about 5 m - so
~3m below site
RP2

Bottom of section
1000m to east
along R.R.

8.15 m below
site RP2

Site RP3

3 m below RP2
5 m above RP4

RP3A

$\alpha = 270°$ 282.5
$\beta = 1°$

RP3B

$\alpha = 282°$ 294.5
$\beta = 8.5°$

RP3C

$\alpha = 290°$ 302.5
$\beta = 11°$

site RP4

8.15 m below RP2

at base of roadcut 1000m east of roadcut that contains RP2

RP4A	RP4B	RP4C
$\alpha = 282^\circ$ 294.5	$\alpha = 315^\circ$ 327.5	$\alpha = 336^\circ$ 348.5
$\beta = 0^\circ$	$\beta = -0.5^\circ$	$\beta = 0^\circ$

---

site RP5 ~2m above that of RP4

RP5A	RP5B	RP5C
$\alpha = 270$ 282.5	$\alpha = 266$ 278.5	$\alpha = 256$ 268.5
$\beta = 5^\circ$	$\beta = 3^\circ$	$\beta = -30^\circ$

Clinch section

This site is taken at the same railroad cut that Clinch sampled in 1984

This site is as high as possible in section

5.6 RP6

∴ middle of section sampled by climb last year

~ 4m below RP5

RP6A	RP6B	RP6C
$\alpha = 233°$ ~~245.5~~	$\alpha = 256°$ 268.5	$\alpha = 281°$ 293.5
$\beta = 7.5°$	$\beta = 11°$	$\beta = 6.5°$

RP5

2m

4m

RP6

3-4m climb

RP1

2.5

RP2

3m

RP3

5m

RP4

Pidiliuta Lake Scale

along pipeline back in from

Railroad cut

PP1 (site)

at bottom of section

PP1A	PP1B	PP1C
$\alpha = 245° \to 257.5$	$\alpha = 248° \to 260.5$	$\alpha = 268° \to 280.5$
$\beta = 18.5° \to 15°$	$\beta = 22°$	$\beta = 34°$

site PP2 is at the same pipeline cut but

190 cm above PP1

thin spar like whole section here

PP2A	PP2B	PP2C
$\alpha = 272 \to 284.5$	$\alpha = 276 \to 288.5$	$\alpha = 280° \to 292.5$
$\beta = -1°$	$\beta = 0°$	$\beta = 0°$

1-13-84 (cont.)

We went to anfiteatro
Moraine and found
that the lacustrine
sediments are too
sandy for sampling.

We have data from the
ball and pillow structure
at anfiteatro and
since they were probably
a fast forming feature (< 100 yrs)
we will use our - ovdeen 10 yrs.
existing data

sites (RL)
at Rio Lavas Valley
at big meander in river
- Lacustrine sediments
FL Condor glaciation
- since it is higher
than Abuelthapi glaciation

section here is
2.5 m
we took a site at top
& bottom

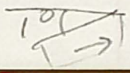
- slight wave, sandy bottom
at Pelikute

site RL1 at top of Rio Lima section

RL1A	RL1B	RL1C
$\alpha = 332°$	$\alpha = 326°$	$\alpha = 338°$
$\beta = 13°$	$\beta = 5.5$	$\beta = 9°$

site RL2 at bottom of section
~2.5m below RL1

RL2A	RL2B	RL2C
$\alpha = 310°$	$\alpha = 333°$	$\alpha = 328°$
$\beta = 5.5°$	$\beta = 1°$	$\beta = 0°$



Jan 15, 1984

Pino Santo basalt

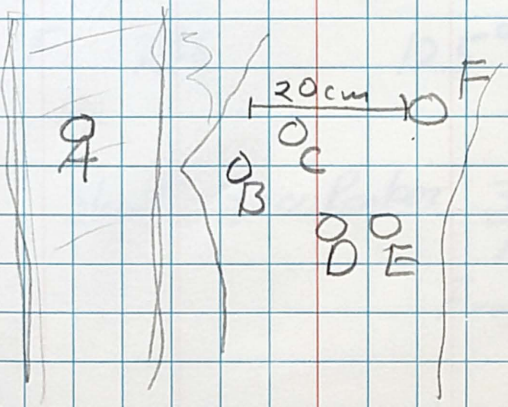
caldera or flow margin

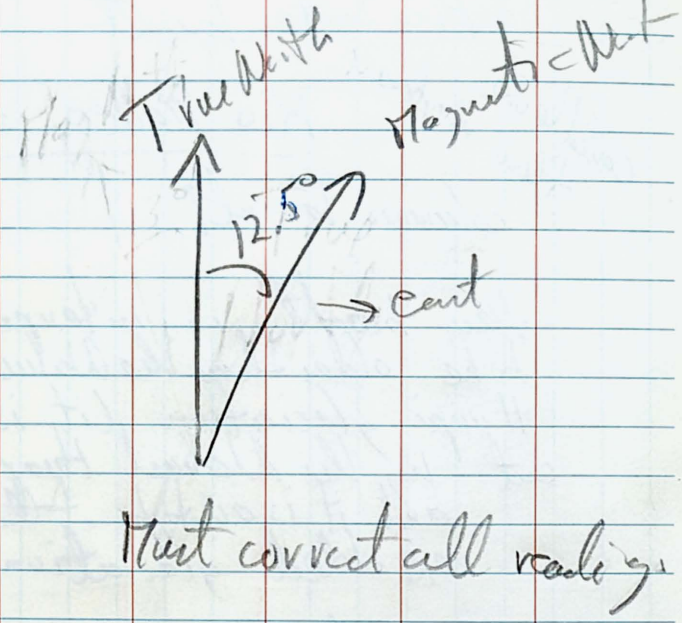
Rio Malleo site

columnar basalt

This basalt is interpreted to be older than the Walwal Huapi glaciation (it is cut by the Walwal Huapi) and it is on top of the next oldest glaciation.

I drilled 6 cores





Must correct all readings

Flowers - they middle of fleck cliff 13° W declination

Rio Malleo Pico Santa Bárbara

Site RMPSB1

	α	β
A	248°26 0.5	22°
B	295° 307.5	17.5°
C	295° 307.5	15.5°
D	295°	15°
E	294	13°
F	298	12.5°

Shoot Trig Peaks 340° Magnetic

From site

Site RMPSB2

at bluff cliff
- looked hard for sandstone in place
- rather few block blocks,
- took 3 samples ABC from one block
and 3 samples DEF from another block 10' away

335° to Tipos Peaks

RMPSB2

	α	β	
A	156°	62°	one block
B	155°	69.5°	
C	151°	65.5°	
D	70.5°	60.5°	10' away
E	70°	63.5°	
F	106°	52.5°	

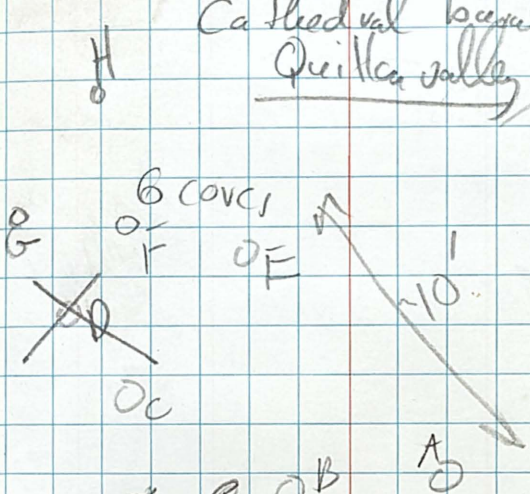
F broke off fit into pos

1-16-85

Wed

Cathedral basalt

Quilla valley



	α	β	◇
A	79.5°	75.5°	
B	248° 250.5	79.5°	
C	245° 257.5	87°	
~~D 305.5°~~	~~72°~~		cracked & covered
E	38° 50.5	50°	broken off
F	51° 63.5	59°	
G	36° 48.5	80°	
H	87° ↓ 99.5	83°	Broken off

magnificent glaciated dolo facial retreat — NE WH.

Quilla valley
lacustrine sediments

possibly Pichilutaype

~40m thick

thin site from top of
the section.

QU1

	A		B		C	
α	221°	233.5	225°	237.5	228°	240.5
β	14°		13°		22°	

QVII — quite sandy

site 1/3 way down from top of section

	A		B		C	
α	235	247.5	244	256.5	233	245.5
β	31°	31	20		18°	

QVIII — ~1/2 way down sect.

	A		B	
α	255	267.5	236	248.5
β	35		36	

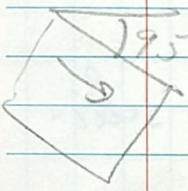
QUIV

at the bottom of the day in the section.

A

α 316 328.5

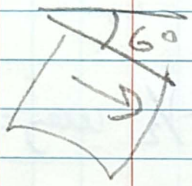
β = 43°



B

α 328 340.5

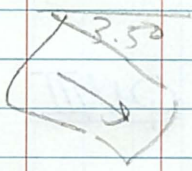
β = 41°



C 340

α = 327.5

β = 42°

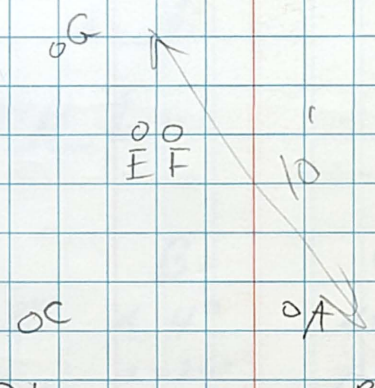


Jan 17, 1985

erratics on top of pre WH soil - older glaciation

Puesta Zapata basalt
near Pullmanic River

I drilled 7 holes & ran out of gas - fractured casing



site PZ

	α	β	
A	77° ~~89.5~~	47.5°	
B	82.5°	59°	95
C	5466.5	60	
D	11.5	70	24
E	7991.5	73.5°	
F	93.5°	77°	106
G	too low to map		

1-17-85

Pulmari Lacustrine sediments

Fission track age on tuff will be attempted

pollen analysis will be conducted

Lok 3 paleomagnetic layers

1st site ~ 3' from bottom of section

PUL 1

	A	B	C
α	22.5	α 4°	α = 27°
β	34	β = 29°	β = 44.5°

site PUL2
30" above PUL1

A	B	C
$\alpha = 18.5°$	$\alpha = 30°$	$\alpha = 26°$
$\beta = 8.5°$	$\beta = 11.5°$	$\beta = 14°$

site PUL3 ~3' above PUL2
at loft section

A	B	C
$\alpha = 356°$	$\alpha = 359°$	$\alpha = 5°$
$\beta = -11°$	$\beta = +7.5°$	$\beta = -6.5°$

July 15, 1999
Tarim Basin China

drove up river valley to first
east section - supposedly going
to Jurassic & then come down
through Cretaceous, Paleogene, Neogene -
- several false starts & then found
correct arroyo - drove as far
as we could in the Yidike (Paleogene-
Neogene) & then walked to
Suweiyi (Paleogene). Rock fall
made it too dangerous to go to
Le Saweiyi - so will sample
Yidike today

- site 1 - East section Yidike fm

Yidi01
N 42° 04.289'
E 083° 18.501
alt ~5500'

Note- compass dec. set = 0

S 58 E dip 38°S
S 75 W dip 42S
N 88 E dip 38°S

downstream - back to car

Vidi 02
N 42° 04. 282'
E 83° 18. 477
elev 5780

str N85°W dip 43°S
str N89°E dip 45°S

Vidike is all redbeds - fairly
coarse grained - probably in the
fine sand - maybe silt sized
we took 4 samples 1st silt
6 samples 2nd silt

silt 2 has cross bedding ~
6" thick running through the silt
cross bedding shows right side up

Vidi 03 is in the Vidike Fm
x is further S. - downstream
from 1 & 2
N 42° 04. 413'
E 83° 18. 454
strike E-W dip 44°S
strike E-W dip 38°S

Lacked fabrics like cleavage or other evidence of deformation - could find none - looks like a relatively undeformed red silt/sand stone

Jidi 04 - further downstream in Jidi

N42°04.020'
E83 18.515'

str S80W dip 36°S
→ 585W dip 43°S

Unit is a bed fining-upward clast-supported conglomerate

Side Jidi 04 is strat under (by 2 m) a 30 cm thick conglomerate bed which is made of dark clasts - has red matrix & angular chert & quartz clasts - alluvial fan deposits

Jack Launch Breccia -

Naam 0 sausages

Jidi 05 downstream

this side is in a much finer bed

N42° 04.125'

E83° 18.381'

str S89W dip 43°S

str N83W dip 47°S

Jidi 06 downstream

N42° 04.115'

E83° 18.420'

siltstone red bed

str E-W

dip 42°S

close together

Jidi 06a downstream

N42° 04.095'

E83° 18.439'

str N85W dip 49°S

str S88W dip 47°S

a close look at the Jidi 6

doesn't show any evidence of strain - no cleavage, no slickenlines on beds

- these rocks are orange red - not purplish at all

Jidi 07 - fine sandstone

N 42° 04. 074'

E 83° 18. 455'

5633' elev.

str E-W

dip 47.5°

Jidi 08

N 42° 04. 089'

E 83° 18. 403'

elev 5290'

str S82W dip 41S

large channel, shown section ~1-2m thick

Jidi 09

N 42° 04. 028'

E 83° 18. 524'

bed directly above 5779 elev

this silt has slickenlines

actually not a bed but a fault

Jidi09

Thatcait bedding

bedding => N76°E dip 53S
S86°W dip 43S
↑ preferred reading
Rim conglomerate layer
directly above

fault plane S65°W dip 61°N

Jidi10
N42° 03.975'
E83° 18.522'
elev 5738 ft
Thin well bedded layer -
just above the trail

bedding S88°E 42°S

Jidi11
N42° 03.948'
E83° 18.440'
elev 5540 ft
N85°E 39°S

1st 2 cores were from
conductivity at this site.
Samples 1 x 2

Yidi 12
N42° 03.931'
E83° 18.420'
elev 5796
N87°W 40°S dip

July 16, 1999
Tarim, China

We drove up the east section
river a long distance to the
coal mine to find a good
Jurassic, Cretaceous, Paleogene
section — we had little luck
with the Jurassic or lower
K - but have found at least
3 sites of upper Cretaceous,
red beds in a dry river
wash. We will sample about
3 sites in this upper Cret.
section — in more massive

fine-grained unit - this is the Cretaceous Kapusa Ivory Fm. - will designate site: KPSL

KPSL01

42°05.799'
83°22.612'
@347' elev

str N 77E 29°S
S80W 37°S ← this is probably more correct.

KPSL02

N 42°05.833'
E 83°22.580'
6187 ft elev

near 1st group of samples → N62°E 29°S (west side of gully)

- across gully (east side) N76°E 31°S

in middle (near 2nd group of samples) S66W 34°S ← might be representative
S82W 35°S
S84W 33°S ← believe these two

KPSL03

N42° 05.810'

E83° 22.590'

5822 elev

N76E 29°S

N72°E 28°S

KPSL04 is very close to site KPSL03 - use same location & strike & dip

KPSL05 - downstream about ¼ mile from sites 01-04

N42°05.738'

E83°22.597 6205'

N74E 27S

KPSL06

downstream ½ mile - outcrop displays particular bedding + neat cross bedding

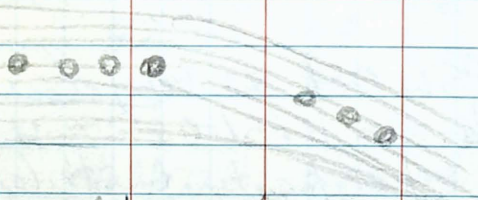
N 42°05.639'

E 83° 22.642

5939 ft

str. N75E 30°S

KPSL7 - gucat
cross bedded s.st



sampled topset x foreset
beds

N42° 05.615'
E 83° 22.649
608 7 ft elev

str N59E 30°S
S68W 32°S

KPSL08
across river gulch - between
KPSL5 x KPSL6/7 strat.
N42° 05.620
E 83° 22.672
633 ft elev

N80E 26S ← right at saddle

KPSL09

N82°E 23.5°S
N 42° 05.442
E 83° 22.678
6395' elev

Large gray red outcrop about 0.1 mile from cross bedsite - all these sites are moving up section

N83E 28S
N86E 31°S

KPSL10 - down a couple hundred feet from last site - is massive outcrop of red ss.

N42° 05.379'
E 83°22.601'
6107 ft.
N82E 26° S

KPSL11 – fortlen downstream (upsection) from side10

N42° 05.265'
E83° 22.694'

c450ft

N80°W 28°S
~~KPSL11~~ N76W 30°S

Waypoint	Brg	Dst
KPSL11	263	.02
10	337	.15
9	349	.20
7	348	.40
8	351	.41
6	348	.44
5	346	.53
1	348	.62
3	347	.62

KPSL01 is 32.8 miles from Kuche hotel at Bearing of 211°

JIO101 is 29.4m from Kuche at Bearing of 207°

KPSL12
N 42° 05.225'
E 83° 22.760'

639' elev
0.10 mile from KPSL11
at bearing of 347°
Had to get S+P here -
use KPSL11 S+P

KPSL13 - halfsize of day

N 42° 05.289'
E 83° 22.739'

5860'
.06 mile from 12
bearing 186°
576 E 25°S
N 70 W 24°S

---

we now have moved to the west side of the river to sample the Kangaroo Fm. on the other side.
Site KGC6 is still on the north - dipping limb of the anticline

July 17, 1999

China

Hoped to sample the Kangcun Fm. (Neogene) & get a fold test. The rocks look very deformed & weathered (fractured). We're unhappy with how the rock. We'll take ~ 5 sites and give most of the samples to Prof. Fang – we'll try to get a fold test.

Kangcun Fm.

1st site KGC1 is on east bank of river – these sites are on the N limb of the anticline

N41° 55.286'
E 83° 18.835'

4507' elev

S80W 55° N
S80W 50° N

actually the rocks turned out better than expected – they look weathered & fresh

KGC2 is just 50' down section from KGC1
N80°E 52°N - KGC2 bedding

KGC3 is 100'-200' downstream (S) of KGC2
N41°55.241 ← KGC3
E83° 18.764
4453 el.
strike E-W dip 56°N

KGC4
N41°55.251'
E 83° 18.874
4352 ft. el.
S83°W 50°N

KGC 5'
N41°55.183
E 83° 18.799
4295'
N81E 62°N
N88E 59°N

We have now moved to the west side of the river to sample the Kanawha Fm. Our first site KGCG will still be taken from N dipping beds though

KGCG
N 41° 54.679'
E 83° 18.667'
4390 ft elev.
we're 0.61 mile away from KGC5 (across river) at bearing of 11°
we're 18.7 mile from Vidi 12 at a bearing of 355°
S70W 39°N
S72W 39°N

KGC7
have come to flat lying beds at core of anticline- likely we will be able
.54 mile from KGC6 N 41° 54.266'
E 83° 19.066'
4390 elev

dip direct.
220 - dip 4°

KGC8 is one m above
KGC7 stratigraphically
- location & bedding attitude
is the same as for KGC7

KGC9 is one m ~~below~~ above KGC8
use same location as KGC7
use same bedding attitude

KGC10 dip direction 220/16°

this is one m below KGC7
dip & direction shown above

KGC11
downstream is undammed
5 dipping strata
W 41° 54.158'
E 83° 19.130' 448' elev.
0.13 mile from
KGC07
580° W Bearing 331°
21° S

July 18, 1999 - China

have come up to the Kuche river section trying to get a fold test on the Sawaiyi Fm. Went to the north limb of the syncline and found the rock weathered & fractured & veined - so did not sample - a quick rain shower trapped Dr. Scott & me briefly in an arroyo -

have come down south on road to sample the south limb of the fold - have travelled up a box canyon of Sawaiyi & coarse - grained sidike

Have had to take GPS near mouth of canyon since can't receive satellites in the box canyon

this reading near SW tip

N 42° 06.400'
E 83° 02.614'
elev 5096'

Suwyi

N82W
50°N
S58°W
50°N
N68°E
50°N

Use these bedding attitudes for sites 1 & 2 in Suweiji

Suweiji 2 is sandstone.
Suweiji 1 is concretion.

- these sites are just inside the dike contact

concretion caves are just as red as sandstone caves - this would suggest that concretion (calcite cement) had to have formed after the hematite - making either concretion fluoring late or hematite formation very early

SUWY 3 site
S 72° W
42° N

N 72° E ←
50° N agrees
with sites
1 & 2

SUWY 5
S 72° W
47° N

SUWY 6
S 72° W
52° N

SUWY 7 S 72° W
52° N

SUWY8
N80E 55°N

---

distance from SUWY1 & SUWY8
0.23 mile @ bearing of 172

---

location of SUWY1

N42° 06.587
E083° 02.572'

---

much of the Saucisi sampled here has a lot of limestone concretions - ~~appears to~~ in recon site SUWY 09 has many concretions

SUWY9
N75E 43°N
(hard to find out good bedding surface at this site - used a small ledge of conglomerate)

SUWY10
N42° 06.906' 4909'
E83° 02.623
.03 from site 8 152° bearing
.20 from site 1 346°

S 74° W 51° N
site SLWY 10

July 19, 1999
Up in the Kuckers section against the creek at Baicheng was too high for sampling. It is raining on and off today so we didn't want to risk going in to collect.

We're sampling the Kapsamalian Cretaceous Fm. along the Kuc. R.

site KKSL01
N 42° 06.225'
E 83° 04.816'
elev 5069'
we're 1.88 miles from SLWY10 at a bearing of 273°
N60°E 55° dip NW

KKSL02
N42°06.200'
E 83° 04.824'
4983'
.04 mi from KKSL01 at brg 353°

56°W 51° NW

site 02 is a bout 3m strat graphically about a core site of

- hard red sandstone in the lithology

KKSL03

N42° 06.216'

E 83°04.775'

4594'

.05 mi from KKSL02 @ 110°

N66°E 51° NW

KKSL04

N42° 06.185'

E 83° 04.721'

N66°E
51°NW

4825'

.06 mi from KKSL03 @ 050°

Helpers - Mr. Chen - driver + prepper

Mr. Sun - driller + research assistant

Mr. Han Lin Chen - writer + future Chair + Dean @ Zhejiang U.

KKSL 05

N 42° 06.206'

E 83° 04.699'

4989 ft.

Hard to find bedrock / N60E 42°NW surface here

pump handle on pump can is broken & has been jury-rigged. We'll probably ditch it & just sample in the drill core - it's a Melnor model 90 2 gal pump can

---

KKSL06

N42° 06.192'

E 83° 04.670'

4855'

N68° E 52° NW

Mr. Sun keeps on drilling even though the unit is getting sandier

KKSL07

N 42° 06.204'

E 83° 04.633' 5062'

N66° E 49° NW

KRSL08

N 42° 06. 197'

E 83° 04. 644'

4968'

N64°E 58°NW

KRSL09

N 42° 06. 214'

E 83° 04. 616

4963'

USC SMD from last site

June 3, 2000

NAD27 Mexico — Baja - Valle Fm.

UTM

KVAL01 site 1 11R 0706744
3080271

site 2+3 11R 0706807
KV2 3080279

---

above have sampled:

1 - clay rich sand (a)
~~1 -~~ poorly sorted sand (c)

2 - soft sed deformation fold

3 - laminated grey silt stone which is same bed as last folded

---

No location for 4 - but cross bed - sampled finest beds which show some winnowing - so supposedly clay has been removed - still showed clay in drill

site 5 - shale bed - mudstone bed
KV5

IIR 0707136
UTM 3080240

site 6 - near site 5
pebbly layer - identical
least pebbles (quartzite according to PS) don't contribute to remanence but if there is a matrix w/ a signal it may be protected from compaction

also - 2 shale layers
+ a conduction layer

---

site 7 - another conduction layer
KV7

IIR 0707159
3080238

June 4, 2000

up track (NE) at Valle
Vizcaino Peninsula

KV10 (site 10) 11R 0707853
UTM 3079948
± 4.7m

2 experiments

site 10
a = coarse
b = medium
c = fine

a) graded bed - sample from coarse to fine all w/ similar clay content

flow
load

b) fluidized bed - settled & incompact fracture

↑ elluviated (winnowed) bed (flow markers)

fluidized bed -

KJ12 11R 071144 /
UTM 3079665 /
± 5.6 km

scales
at Punta Loca

June 6, 2000

composite bed set at 0

part San Ignacio
campsite 12R 0299270 UTM 2985767
lower Eocene - Bategui Fm.
clean sand - from hard bed w/ spherical weathering holes & protrusions

site EBK1

1 arrow S76E - dip/face 90°

2 arrow S71E dip/face 90°

3 arrow S76E overturned face 95° dip

4 S75E overturned 97

EBK 1-5 S82E 96
EBK1-6 S77E 96

---

bed 2 -2m below
EBK1

EBK2 - coarser grained than EBK1
but appears to be connected

EBK2-1 arrow S75E
dip 92°

EBK2-2 S78E 92
EBK2-3 S77E 93
EBK2-4 S75E 91
EBK2-5 S80E 94
EBK2-6 S77E 94

strike N64W
dip 14 SW

---

strike & dip according to DS
210° strike
2° East

Bed 3 - mudstone
across arroyo from 1 & 2

EBK3

EBK3-1 S3W 64
EBK3-2 jordan talk
EBK3-3 S58W? 60 ? S2W?
EBK3-4 S9W 60
EBK3-5 S7E 53
EBK3-6 S6W 47
EBK3-7 S9W 52

---

also collected 2 sites - hand sample
+ 2 more sites from mudstone
at base of amphitheatre
EBK4

Total - San Ramon
6 sites

June 7, 2000

Manicyap Uleaarroyo - North side of Bahia Ballenas

12 R 0256936
2981497

Eocene Bahia Ballenas Fm.

site EBB2

KPK collected - headsamples - just above fossil marls

1 S40W - dip 16 L NW ← could strike & dip
↓ should be 7° - read wrong dial

2 N40W - 9° L SW

~~3 N81W dip 7° L NE~~

4 - in Franki instr.

---

site EBB4

12 R 0256943
2981525

I collected

strike 135
dip 14 NE

EBB4-1 S85E dip 10 NE

EBB4-2 S58E dip 14 NE

EBB4-3 - approx. 20 feet
downarroyo & ~1 km below
strat. 4-1 & 4-2

SG6E 10NE

---

site EBB5

RR 0256910
2981620

highest site in the arroyo

5-1 N68W 9 NE
5-2 N 63W 13 NE
5-3 N 65W 7 NE

June 8, 2000 (Alicia graduation)
San Lorenzo
up the arroyo to
RR 0228359
2987308
1.69 km up arroyo from car
- segment of turbidite
submarine fan
- have shale to massive sands

attempt reproduce Patterson's results - -
various grain sizes & probably different amounts of clay

from fine grained layer
SL1-2
arrow pts east (mud, true?)
dip of surface 13°N

SL1-5 sandstone
S82E
28N

SL1-6 sandstone
S55E
7N

oriented surface of this rock

strike N55W
dip 12NE

took 6 mudstones & 2 sandstones at this site - will compare mudstones & sandstones

site
SL2 - Sandstones just up section from SL1

GPS 12R 0228323
2987321

SL2-1 - coarse sand fm
bottom of graded bed

SL2-4
near top of normally graded ss bed
N 72W, 70 SW on fracture surface
bedding S&D = N55W, 10° NE

SL2-5 near top of graded bed sandstone
S58E
57SW

June 9, 2000

Asuncion Fm - Arroyo La Laguna
climbed up ridge + found limestone
in Asuncion - surface appears
weathered but interior may be fresh
GPS 11R 0786425
3009420

site A2 - Near my Bryan to
limestone ~~limey sand~~
~~A2B NNW 52E~~ broke apart

A2B N25W 59E

---

site A3 11R 0764660 limey sand
3009476
A3B N25W 28NE

---

site A4 - tuff
11R 0764679
3009430
A4B N0° dip 58E

My Brunton was set to 10°W

San Ramon both outcrop sites I collected I used my Brunton

3rd outcrop site - mainly this Brunton.

4th site - I took one core - the rest was with Jordan's Brunton.

handsample all w/ Frank's Brunton

Lost Eocene on W. side of San Lorenzo

Sec Notes & Picc coal I collected

Jordan used my compass at lower site

studied 12 samples

site A5 - ancillen tuff
11R0764745 3009343
A5B S28W 52NW

---

site A6 limey sandstone - just
above Valle
11R 0764762
3009304

A6B N82W 42N

June 10, 2000

have arrived at Habra San Pablo
just north of Punta San Roque
- have climbed over Punta San
Roque (2.5 hr hike) since we
got stuck in the sand yesterday
trying to drive here

we are sampling the Asuncion Fm.

site A12
11R 0754720
3011019

$CaCO_3$ cemented limestone

A12-1 (fine grained)
S55W 15S

A12-2 Coarser sand - has layering
S33W 12E

A12-3 - fine grained - broken
S66W 26S

11R0754729
3011011

site A15 - upstream from A12
- right next to A13 at JV.

A15-A	560W	365	Utility arc also strike side
A15-B	581W	395	
A15-C	577W	315	

site A14 GPS 11R0754733
3010983

11/6/2007 14:36

Spinnerstown Diabase

Core 1 Trend - 151° | add 11° for NW
Plunge - 13.5° | 161

Core 2
Trend - 149° | 160
Plunge - 15°

---

spinner, town diabase measurements
- Rte 663 outcrop -
- EES 334 class take data

Sample		Mass	Susc*	Susc/Vol / Mass
1A	core 1	32.06 gm	206.6-3	1.925-2
1B		22.63 gm	110.3-3	1.43-2
2A	core 2	34.50 gm	240.4-3	1.959-2
2B		31.28 gm	241.3-3	2.25-2

*Vol set = 1 cc

SI/cc cgs
1.891-2

	N (cc)**	emu/gm		
1A	316.3	4.0	1.308-3	
1B	5.3	37.8	3.700-4	1.505-3
2A	351.5	41.5	7.562-4	
2B	3.0	59.4	1.213-3	

4252244
$8.50